Midterm 1 Review

Pointers
- Referencing with &
- Dereferencing with *
- Pointer Independence
- Assigning through *
- Pointers as Variables

Linked List
- The node class
- Iterating through a Linked List
- Making a Linked List
- Operations (add to head, remove from head, etc)

Stacks
- LIFO
- Top, Push, Pop
- Depth First Search
- Applications

Queues
- FIFO
- Front, Push (enqueue), Pop (dequeue)
- Breadth First Search
- Applications

Analysis of Algorithms
- Selection Sort
- Insertion Sort
- Fisher-Yates
- Binary Search
- Merge Sort
Analysis of Algorithms

- Big O Simplification
- Dominance Relations
- Arithmetic Series \[ \sum_{i=0}^{n} \frac{n(n+1)}{2} \]
- Analysis of simple functions (iterative and recursive)

Recursion

- What is recursion?
- Basics
- Backtracking
- Minimax

Types of Questions

- multiple choice/conceptual
- multiple choice/find the bug
- what does this code do/print?
- analysis of simple functions (as on worksheet W10)
- coding - could require the use or manipulation of:
  -- linked lists
  -- stacks
  -- queues
  -- simple recursion (no backtracking, minimax)